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**Using the medical group as a learning tool in  
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# Using the medical group as a learning tool in economic education

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By

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**Abstract:** The learning group in Regional Economics works in a similar way as the *Balint* medical group. During a session, a “problem” is presented by a group member, in the context of a rotation or “turn taking”. The other members do not try to “solve the problem” by adding technical information or giving “advice” to the presenter. Instead, they explore its meaning by treating the issue as if it were their **own problem**, revealing in loud voice their free associations with the topic initially presented. This kind of reflection helps the presenter because it forces her to “think further” about the issue, overriding the trend to solve the problem in an automatic, pseudo-intuitive way.

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## 1. Introduction: previous experiences of group learning in Economics at a Lisbon University

Standard learning methods in the university are quite simple as they imply a “receptive” stance by the students who are supposed to attend lectures given by professors and then revise the taught matter by reading textbooks after the classes. This “passive” posture is also an “individual” one, since students do not cooperate much among themselves while learning. Under this framework, learning is the simple memorization of the theory transmitted during lectures, while it should be rather regarded as the outcome of a personal reinterpretation of the programmed knowledge by the student. (THORNTON, 2010).

Furthermore, this procedure excludes from learning an important segment of the school, namely more senior professors and researchers, who need a continuous updating of their knowledge basis and a collective backup of their individual research processes. Hence, at the *Economics and Management Institute* (ISEG) of the Technical University of Lisbon there is an attempt to form learning groups, that meet periodically with the purpose of supporting and advancing the personal research of each member. This attempt took two successive forms: the *MicroUECE* learning group; and the group-analytic coaching of the Economics Department Seminar at ISEG.

### 1.1 The *MicroUECE* group.

During the academic year 2009-2010, a learning group, labeled as *MicroUECE*, was launched including researchers from a project inside *UECE*, the research center that contains most economics researchers within ISEG. This was indeed a “learning group” rather than a “team”, in the sense of THORNTON (2010), because it aimed to stimulate the private research goals of each of its members, rather than pursuing a common goal (a “research project” or a “joint paper”).

A good description of workings of *MicroUECE* can be found in PONTES (2011). The members of this group had different specializations, although they could be subsumed under the common trait of *Microeconomics*, i.e. the field of Economics that deals with the decentralized behavior of individual economic agents (firms and households).<sup>2</sup> The group had six members, including myself who acted as coach, given my previous experience in psychodynamics. Three group members were professors of the Economics Department of ISEG and the remaining members belonged to other Lisbon based institutions.

The group *MicroUECE* had a monthly meeting. In each session, the coach assigned the “turn to speak” to each member, reserving for himself the last turn.

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<sup>2</sup> *Microeconomics* differs from *Macroeconomics*, which is concerned with the behavior of aggregate variables, as the GDP, unemployment rate and so on.

The interventions by the members varied a lot in length of time: from a 5 minutes statement about the research work done since the last group meeting to a full presentation of a paper during about 30 minutes. Sometimes, the “turn taking” was upset by a dialog between the members who commented each other’s activities. This dialog always took place after all members had taken their “turn to speak”.

Looking retrospectively, and referring to THORNTON’s (2010), learning in this group was the result of a tension between “holding” (the safety/stability feeling provided by the group working rules, which are enforced by the coach) and “exchange” (the contact with new/different knowledge, that works as a “challenge” for the subject of learning). Clearly, although very informal, *MicroUECE* ensured both of them. On the one hand, “turn giving” gave “holding” to each participant, since it ensured that he was listened in silence by the other members, thus avoiding an excessively fierce competition for speaking time and tough criticisms among group members. On the other hand, the ensuing discussion created an opportunity for members to “exchange” ideas, thus making possible for each participant to benefit from new and challenging information.

## 1.2 The group-analytic coaching of the regular seminar of the Economics Department of ISEG.

The Economics Department of ISEG and UECE had for a long time a regular research seminar, with a weekly or fortnightly frequency. In each seminar session, a speaker (either from ISEG or from an outside institution) presents his research paper during about 45 minutes. Then, there is a period of questions and answers, where a member of the audience poses a question that is immediately answered by the presenter.

The seminar had two related problems (see PONTES, 2011).

- The first was an “empty room” problem. It often happened that very few people attended the seminar sessions (sometimes only the seminar organizers were present), which was particularly embarrassing when the presenter came from an outside far away institution and was faced with an apparent lack of interest of the home institution in his work. This problem was “hidden” in a certain way through the selection of a small room for the seminar to take place.
- The second followed from the first one. The fact that very few people attended the seminar sessions created in the institutions such as *FCT* that evaluated *UECE* an impression that the research center lacked cohesion and that the research interests of its members had almost nothing to do with each other.

The reform of the seminar protocol was threefold:

1. The seminar room was moved to a larger room, in order to reveal fully the core issue, i.e. the “empty room” problem.

2. The scarcity of the audience was accounted for by a lack of “holding” by the seminar attenders. Nowadays, most research in Economics is very “technical” and specialized, making it difficult for listeners to understand and adhere to its premises. In order to overcome this problem, a coach was introduced, with the specific mission of “explaining” the paper, using a simple, non-technical language. The coach varied from session to session, but he was always a member of ISEG, often endowed with authority (a Full Professor, Chairman of ISEG, Chairman of *UECE*, Head of the Economics Department) in order to maximize the “safety” feeling among the attenders.
3. During the discussion stage, the presenter was kept “outside the session” (in silence) in order to stimulate the attenders to speak and give a personal reinterpretation of the paper to the speaker, who therefore received “exchange” for its presentation. The presenter only spoke in the end of the session, drawing the main conclusions.

This reform faced a lot of resistance, so that it worked fully only during 2010-2011 when the author of these lines took it in charge personally. In the following year, 2011-2012, the room and the coach were kept, but the practice of keeping the speaker “outside the discussion period” was discarded. Finally, in 2012-2013 (the current academic year), even the coach was removed, with the consequence that the “empty room problem” emerged again.

In academic year 2011-2012, we launched a new learning group where the scope was defined as “Regional, Urban and Transport Economics”, with the acronym **UrbanEcon**. However, this time we wanted the group to work according to a more precise protocol. Following THORNTON’s (2010) suggestion, the so-called **Balint group** appeared as the most efficient and time-saving model<sup>3</sup>. Saving time matters because usually professors have their time consumed by heavy teaching loads and administrative work, so that their availability to meet is rather limited.

Consequently, in order to understand the workings of **UrbanEcon**, we need to have an insight of the **Balint group**.

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<sup>3</sup> The *Balint* group is regarded as more time-saving than the “action learning” groups (see THORNTON, 2010).

## 2. The *Balint* group

### 2.1 What is a *Balint* group?

*Balint* groups are made by doctors (general practitioners or GPs) and they stem from the work of psychoanalysts Michael and Enid Balint in the UK in the beginning of the fifties of last century. This kind of groups have developed and evolved much since then. The main goals of Balints' work were, according to LICHTENSTEIN and LUSTIG, 2006:

1. To encourage doctors to value their own interpersonal skills and become aware of their own limitations in this field.
2. To increase the perception and understanding by the doctors of the patients' communications.
3. To enable doctors to become conscious of the *blind spots* (aspects that they neither want nor are able to understand) during their interactions with the patients.

A *Balint* group is made up of a certain number of GPs, between 6 and 12,<sup>4</sup> and a group leader endowed with psychoanalytical (or group-analytical) training. Sessions have a weekly or fortnightly frequency and may last for several years.

Michael Balint mentioned that "a personality change" through this technique takes about 2 years to be completed, so that a group should last, at least, for this time lapse. KJELDMAN et al. (2004) consider that some effect is felt after 1 year of regular sessions, so that they classify the doctors in the following classes:

1. GPs that never participated in a *Balint* group.
2. "Young" *Balint* GPs, who have attended the group during 1 or 1.5 years.
3. "Experimented" *Balint* GPs, with 2 or more years in the *Balint* group.

In each session, according to a rotation, a GP presents a clinical case involving one patient. Then, the group discusses the case, exploring it from the perspective of both the doctor and the patient.

### 2.2. "Patient-centered" instead of "disease-centered" medicine

The main contribution of the Balints' work consists in that it does not attempt to isolate a specific "disease" (either psychological or organic) in the patient whose case is discussed in the group using "technical" or "medical" knowledge. Instead the group treats the patient as whole, a "human being", integrated in her social environment, rather than a mere set of symptoms (BALINT, 1969).

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<sup>4</sup> Some authors mention a range between 6 and 10. Others say that the group should be comprised by between 8 and 12 members.

In the traditional medical relationship, the doctor had an active role as some kind of “detective of diseases” in the patient. By contrast, *Balint* groups assume that the patient has an active role by choosing a specific way of “using” the doctor, as if the doctor were some kind of “medicine”. Hence, the patient is not in a fixed position assigned by the doctor, but he is rather “loose”, in the sense that he can choose the kind of relationship that he desires to maintain with the doctor. The relationship itself is in the center of the discussion by the *Balint* group (KJELDMAN et al, 2004)..

This shift of perspective can take place in any kind of learning group as the **UrbanEcon** group in Economics School. Suppose that a group member presents a research problem. Then, rather than attempting to solve the problem exactly through the use of a technical knowledge, the group can try to “reframe” the problem through exploring its meaning. According to this line of behavior, each group member deals with his free associations with the problem presented and he treats the problem as if it were his **own** problem.

### 2.3. Benefits of the *Balint* process

The working of a *Balint* group for several years improves the quality of the doctor-patient relationship, thus benefiting both. TURNER and MALM (2004) report that “resident” GPs who had participated in training available through the *Balint* group had higher grades than those GPs without *Balint* training in fields such as:

- Knowledge of the reactions by the patient to his doctor.
- Self-understanding by the doctor.

The improvements concerning the patient were unsurprising:

1. Doctors feel more able to treat patients with psychosomatic diseases.
2. They feel also more skilled to handle patients with “vaguely defined” or “intractable” health conditions.
3. They tend neither to refer this kind of patients to other doctors, nor to prescribe unnecessary exams, in order to “get themselves rid” of the patient.

However, the gains for the doctors themselves were rather unexpected (KJELDMAN et al., 2004):

1. They seem to have developed a higher ability to control their working hours, both in terms of content and time spending.
2. They appear to be more satisfied with their work situations.
3. They show to have implemented adapting strategies in order to cope with professional stress.

## 2.4 “Holding”: the safe environment and stable rules.

A key factor of learning in a *Balint* group, as in any small group, is the creation and of an atmosphere of “safety” and “trust”, similar to what is given by the mother to her child when she “holds” the baby in her arms (THORNTON, 2010).

In the particular case of the *Balint* group, “safety” follows from a stable set of rules implemented by the leader. These rules prevent the members from competing too fiercely for speaking time and allow them to express divergent points of view without being subjected to harsh criticism or cross examinations.

The rules may take this form:

1. A GP presents a clinical case in 10 minutes. The other members keep silent.
2. The group discusses this case, as if it were their own, during 20-25 minutes. During this stage, the presenter “stays out” of the group, keeping silent.
3. The presenter “comes back” and outlines the topics of the discussion that were more helpful from his viewpoint in 5-10 minutes.
4. All the group members talk freely. Each participant tries to express the “repressed feelings” experimented during the former stages, during 15 minutes.

This protocol allows each member to feel “safe” when he is speaking, because it ensures that the others “listen” to what he is saying. As KJELDMAN et al. (2004), p. 235, say:

*The stable frames and safe milieu in the Balint group, maintained by the leader, can probably act as a greenhouse, facilitating the physician’s growth.*

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## 2.5 “Exchange”: mobilizing the group to its task

The concept of “exchange” is related with the emergence in a group of “new” or “different” knowledge which “challenges” the group members and leads to their growth.

According to THORNTON (2010), in a *Balint* group there is no common learning goal, each participant having his own learning task. However, JOHNSON et al. (2004) say that the leader should “initiate” or “mobilize” the group to achieve its specific task.



## 2.6 Why does the *Balint* group work?

LICHTENSTEIN and LUSTIG (2006) give the following rationale for the efficiency of *Balint* groups in improving both the patient and the GP. They are inspired by the work of Economics Nobel laureates KAHNEMAN and TVERSKY on the intersection of economics and psychology.

When a GP faces a new patient, he feels uncertain about diagnosis. Moreover, he has to take a fast decision because either the case is urgent, or he has many patients to handle during a short time lapse. Then, the doctor is tempted to rely automatically on his “intuition”. The diagnosis thus produced may reveal itself as false, being the outcome of a premature closure of the diagnosis process.

In this situation, the doctor needs to stop and monitor her automatic intuition. Probably, it is advisable to consult the medical literature, or a colleague or to prescribe more exams, in order to superimpose automatic intuition with deliberate reflexive thought.

The *Balint* group is very efficient in performing this process of “supervising carefully” the intuition of each of its members. The group’s role is not to give “technical advice” to the involved GP, since this advice could also be distorted. Instead, each group member should say in loud voice “...if I had this case, how would I behave”.

## 3 The learning group in “Regional, Urban and Transport Economics” (acronym *UrbanEcon*)

In ISEG, a learning group in the field of “Regional, Urban and Transport Economics” was launched, starting in 23<sup>rd</sup> May 2012, thus completing now about 8 months. It borrows the *Balint* protocol described above in subsection 2.4, so that its members are now “young *Balints*”. It is planned that it should last for two years, the standard lapse of time for this kind of group.

“Regional and Urban Economics” deals with the location choice by households and firms at both a macro-scale (the “region”) and a micro-scale (the “city”). The analysis is focused not only in static terms, concerning the formation of economic landscapes, but also according to a dynamic perspective, concerning regional growth.

“Transport Economics” is a different field, since it is related with the sectorial organization of the flow of cars/buses, trains and airplanes. Nevertheless, it is related to the former topic, since there is a two-way causal link between the adoption of modern transport technologies and the locational pattern.

“Regional, Urban and Transport Economics” perform an analysis mostly at the disaggregated agent (household, firm, transporting agent), so that it exhibits a distinctly “microeconomic” flavor. Most research in this field is empirical, although a minority of researchers attempt to apply microeconomic theory (including game theory) to location choices and regional growth.

The **UrbanEcon** group was initially composed by seven members (including myself as a group leader), who are mostly college professors, although there is also a non-teaching researcher, belonging to a state lab. While most members engage in applied economics, two of them have interests in microeconomic theory, particularly in game theory.

An eight member, from the Mathematics Department of ISEG, joined the group in 2/10/2013.

The group has a one hour meeting each fortnight. The meeting takes place regularly at the same day, at the same time, in the same room (or in neighboring rooms). The room is equipped with a large, white board and the members sit around a table. Each group session is announced two weeks before and a reminder is sent two days before the meeting. Announcements and reminders are made by Email.

The topics of the group sessions that took place already and the presenters are the following:

1. Pedagogical problems raised by the discipline *Urban Economics* (undergraduate students). Presenter José P. Date: 23/05/2012.
2. Characteristics and regional distribution of older workers in Portugal. Presenter: João L. Date: 06/06/2012.
3. Challenges posed by the reform of urban taxation. Presenter: Vítor E. Date: 20/06/2012.
4. Potential of development of a *mega-cluster* around the ocean in Portugal. Presenter: Regina S. Date: 3/07/2012.
5. Coordination games in regional economics. Presenter: Joana P. Date: 18/07/2012.
6. Coordination games in regional economics. Presenter: José P. Date: 19/09/2012.
7. Non monocentric cities – their importance in the Portuguese economy. Presenter: Manuel C. Date: 3/10/2012.
8. Finding “missing” data during the estimation of environmental externalities in transportation. Presenter: Elisabete A.
9. Agglomeration economies – the case of cork industry in Feira. Presenter: João L. Date: 31/10/2012.
10. Evidence of corporate social responsibility. Presenter: Manuel C. Date: 21/11/2012.
11. Appraisal of programs of cohesion policy in the long run for 15 Portuguese regions. Presenter: Regina S. Date: 4/12/2012.
12. Coordination games in regional economics. Presenter: José P. Date: 9/01/2013.
13. The role of institutions of Higher Education on regional development. Presenter: Vítor E. Date: 23/01/2013.
14. Development of a research program in *Transport Economics and Policies* both at the national and European levels. Presenter: Elisabete A. Date: 6/02/2013.
15. Social and Economic Networks. Presenter: Joana P. Date: 27/02/2013.
16. Geographic capital: a challenging research frontier, Canadian and EU comparisons. Presenter: Regina S. Date: 13/03/2013.

17. Regional integration and business locations: a long run approach to the cork industry in the Iberian Peninsula. Presenter: João L. Date: 20/03/2013.
18. Portuguese aquaculture: the emergence of an “Anti-Commons” tragedy? Presenter: Manuel C. Date: 10/04/2013.
19. European transport policy. Presenter: Elisabete A. Date: 8/05/2013
20. Territorial governance in Portugal. Presenter: Regina S. Date: 29/05/2013.
21. Communication in coordination games and regional development. Presenter: José P. Date: 19/06/2013.
22. Balanced growth. Presenter: Joana P. Date: 18/09/2013.
23. Fraction panel data with non-observed heterogeneity: an application to intra-trade indices. Presenter: Isabel P. Date: 2/10/2013
24. Contracting in the context of territorial multi-level administration. Presenter: Vítor E. Date: 16/10/2013.
25. A network approach to regional economic growth. Presenter: João L. Date: 30/10/2013
26. Coordination games and economic development. Presenter José P. Date: 13/11/2013.

## 4 Adaptations made in UrbanEcon in relation to the medical group.

We will now describe the main adaptations that **UrbanEcon** shows in relation to the medical *Balint* group at the different protocol stages.

### 4.1 The presentation stage

Our initial intention was that both “pedagogical” problems (arising with students) and “scientific” problems could be tackled during group sessions. The former problems seemed to me a more straightforward application of the *Balint* work. Hence, in the first session, I myself presented a “problem” concerned with an apparent “teacher’s failure” in an “Urban Economics” discipline for undergraduate students.

However, my colleagues did not find pedagogical problems to be interesting enough for being the subject of reflection in the group. Henceforth, **all** presenters but me proposed scientific/research problems for discussion. My interpretation is that “research” is nowadays a much more decisive factor of professor’s promotion than teaching. We can also interpret this attitude as a way of avoiding to deal with human relationship problems and concentrating instead in “technical”, impersonal information.

With the exception of Joana P. and myself, who are engaged in theoretical work (application of game theory to regional growth), each group member used each one of her presentations to discuss a different problem (a different project of a paper). I told them that this was not

necessary, so that the same “problem” could be repeated in several sessions, may be with a slight shift of focus. This repetition is standard in medical groups, where the same patient is repeatedly seen by the doctor for several months or years.

How to explain this difference? My opinion is that the group members find the group time too precious to be “wasted” with the discussion of a single paper more than once. Furthermore the repetition of the same “problem” across group meetings could make their inquiry too “deep” and “subjective”, so that it was avoided.

In the medical group, the presenter is selected without preparation, in the beginning of the session. Furthermore, presentations are exclusively verbal, no written notes being allowed as basis for the presentation. By contrast, in **UrbanEcon**, the presenter is selected in advance (in each session, the presenter is chosen for the next session), he is supposed to write a note with topics, not longer than a A4 sheet of paper, one-sided, and send it in advance to other group members.

Clearly, this adaptation decreases the “spontaneity” of the group meeting and increases the role of the “technical information” in the reflection in detriment of the free association of each member with the problem presented. But it is needed since the session is focused on a “scientific problem”, rather than on a human relationship problem. The written note also provided a record of the topics discussed during the session.

Furthermore, the members showed a tendency to increase the size of the written note beyond the upper bound and it was necessary to stress that this bound should always be respected, for the sake of the verbal nature and spontaneity of this process. Again, we can conclude that the members tried to increase the role of “technical” and “scientific” information in detriment of a more personal engagement in the process.

Since some of the presentations were related to papers where the presenters had co-authors, these were also invited to join the group in the respective session. This also concerned *foreign co-authors* who happened to be in Lisbon at the time of the group session.

## 4.2 Reflection by the group

On some occasions, the leader of the group had to intervene in order to prevent a direct reply by the presenter to the member of the group that made a sharp comment. This happened more often in the first sessions. As practice accumulated, this kind of interventions by the group leader became unnecessary.

In order to ensure a safe atmosphere, so that each member should have time to make a comment, a “turn-taking” structure was implemented in this stage. However, as Vítor E. noticed, this structure of the reflection stage is merely optional and can be broken in some circumstances (and indeed it was). In this case, the group leader had to ensure informally that each group member spoke during this stage.

### 4.3 Reaction to comments by the presenter

The presenter in **UrbanEcon** tried to reply to **all** members of the group, instead of concentrating on those comments that contributed more to further his own research, as in the standard *Balint* group. This behavior aimed to preserve a “nice” and “good-mannered” atmosphere during the group session at the cost of making the learning process less efficient.

### 4.4 Final revision by the group.

This stage proved to be very important not only to allow the members to say “what had not been said before”, thus revealing repressed feelings, as in the standard *Balint* group, but also to introduce a discussion where the participants can compete more freely while speaking.

Up to now, the structure “one talks, the other listens in silence” preserved “safety” among the group members, giving “holding” to the presenter in particular. Now the members are free to challenge each other with “different” knowledge, thus creating the opportunity of “exchange” to arise.

This is the more therapeutic stage. During one of the last sessions, Regina S. said “this process enables us to learn and, moreover, it makes us feel good”.

### 4.5. Is the analogy between the general practitioners’ (GP) group and the economics professors’ (EP) group sound?

From what has been said above, it is clear that there are important differences between GP’s and EP’s groups. Firstly, the GPs are by definition unspecialized physicians. By contrast, the EPs engage in research in a very narrowly defined and specialized way, although they are all committed with the spatial or geographic nature of economic phenomena. Secondly, GPs in a *Balint* group discuss a clinical case, so that a third person (a patient) is involved. By contrast, in the *UrbanEcon* group no third part is involved in the process. Instead, a “problem/question” that arises during research is brought to the group and discussed within it.

These differences do not matter very much. Even if the members of EPs group have differentiated skills, the “holding” provided by the group allows them to find a “common ground”, where they can communicate freely at an “empirical” level. This means that, when a presenter puts forward a “problem”, there will be one or two members that can give a “technical” contribution, while the others can “reframe” the problem, by associating it freely with their own experience. In the *Balint* group, the latter kind of feedback outweighs the former one.

That most communication is “non-technical” explains the coexistence within the group *UrbanEcon* of members with very dissimilar background. For instance, a member belongs to a Geography Department, where very little mathematics is taught, and another one works in a Mathematics Department. One should bear in mind that in this kind of group, learning goals are private to each group member.

Secondly, the “problem/question” presented in the beginning of each *UrbanEcon* group is not completely subjective, as it is backed by a set of bibliographic references (i.e., journal articles, books) whose knowledge is shared by a community. This “outside community” is the analogue in the EPs group the “outside patient” in the GPs group.

Consequently, we can say that the economics professors’ group works indeed like a *Balint* group.

## 5. An example: what did I learn personally with UrbanEcon?

Within **UrbanEcon**, besides coaching the group, I was also a presenter and a group member. For that purpose, I teamed up with Joana P., so that we coordinated our presentations in order to write a final joint paper.

Our learning goal concerned the modeling of regional growth through non-cooperative game theory. Let us assume a static game with several (Nash) equilibrium points. The selection of a single equilibrium involves the specification of beliefs by each player concerning the other players. Different equilibrium points may involve very heterogeneous outcomes, namely stagnation *versus* growth. As LUCE and RAIFFA say:

*For a given society, a set of moves and patterns of behavior gradually build up and then remain stationary for long periods of time; yet another society, with approximately similar initial conditions, will evolve to a quite distinct pattern of cultural norms. Loosely speaking, we may regard these as two possible equilibrium “solutions” to this game. (LUCE and RAIFFA, 1957: 105)*

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An example is given by the following profits matrix:

		Clothing Producer	
		$I$	$N$
Food Producer	$I$	8,8	0,6
	$N$	6,0	6,6

The story behind the matrix is the following. Assume that there are two firms that operate in the same region. The regional economy is closed to trade, so that neither imports, nor export are allowed.

Each firm has two available actions: either to invest in a new factory (action “I”), or refrain from investing in production (action “N”). If a firm does not invest, the consumers self-produce its good at home. We assume that each consumer spends exactly one half of his income in each good.

The firms are complementary in the sense that they create demand to each other. If both firms invest, the additional output is sold to the workers in the other firm and makes a profit of 8. If a firm invests and the other one does not invest, the former does not make money, since it cannot sell the increased output to consumers. If a firm does not invest in a new factory, it buys bonds that ensure an income of 6.

Clearly, in this game, there are two (Nash) equilibrium points:  $(I, I)$  and  $(N, N)$ <sup>5</sup>. Indeed, if a firm invests (resp. not invests), the best reply of the other is also to invest (resp. not invest). These equilibria have very different meanings:

- Equilibrium  $(N, N)$  is related with economic stagnation, due to a “poverty trap”.
- Equilibrium  $(I, I)$  is related with regional growth following from productive investment.

Since there are two equilibria, each player is uncertain concerning the choice made by the other firm. It is necessary to select a single equilibrium by specifying the expectations of each firm on the other firm’s behavior. Clearly, there are reasons to select either equilibrium point. A good treatment of this topic can be found in COOPER (1999).

- Equilibrium  $(I, I)$  is “dominant in profits”: no other outcome of the game gives each player a profit higher than this equilibrium point.
- Equilibrium  $(N, N)$  is “risk dominant”, i.e. it is based on the less risky  $N$  strategy. In order to realize this, notice that strategy  $N$  gives the certain profit 6, while strategy

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<sup>5</sup> These are pure strategy equilibria. There is also a symmetric mixed strategy equilibrium which we find unnecessary to mention.

*I* gives 8 as a best result, and 0 has a worst result. In the absence of sufficient information, the player assumes that the opponent assigns probability  $1/2$  to each one of her actions. Hence, the profit that is expected to result from *I* strategy is

$$8\left(\frac{1}{2}\right) + 0\left(\frac{1}{2}\right) = 4 < 6.$$

Our problem was to determine under what conditions the two possible outcomes would arise. It was clear to us that this is related with the working of pre-play communication between the two firms. Were this communication bilateral and successful, then the firms would settle in the “profits dominant” equilibrium, they would both invest and there would be regional growth. Otherwise, neither firm would invest, the result being economic stagnation.

Apart from Joana P. and I, the other group members are mainly interested in applied research. However, they have helped us in three different ways:

1. They reassured us that this approach to regional growth was both sound and insightful.
2. Being themselves applied researchers, they listed several examples that they freely associated with our theoretical model:
  - In International Economics (made by Armando P.), a firm that invests abroad seeks to bring with it its suppliers of parts. For instance, this has happened with Japanese automakers in the US.
  - In European Economics, negotiations around the European Budget can be modeled as a coordination game. For instance, investments in High-speed rail lines in different countries are complementary on account of network externalities.
  - In Regional Economics, the rules for allocating Structural Funds (SFs) obey the condition of “collective efficiency” (see *Quadro de Referência Estratégica Nacional –QREN*). This means that the efficiency of an investment that gets finance from SFs is not calculated in isolation, but as a part of the efficiency of a set of activities that form with it a regional cluster.
3. Not being very much acquainted with non-cooperative game theory, they suggested that a cooperative game approach would always lead to the outcome of investment and growth. Assume that the formerly independent firms are now part of a corporate group that chooses their actions in order to maximize the joint profit. The payoff matrix of the group is now:

		<i>Column</i>	
		<i>I</i>	<i>N</i>
<i>Row</i>	<i>I</i>	$8+8=16$	$0+6=6$
	<i>N</i>	$6+0=6$	$6+6=12$



It is clear that the group will set up two complementary factories, thus making a profit of 16. However, this solution will be unfeasible if the costs of negotiating a cooperative agreement between the two firms are prohibitive. Then, we have to resort to a non-cooperative solution. The explicit modeling of a pre-play negotiating stage seems necessary.

## 5 Concluding remarks

The learning group in Regional Economics works in a similar way as the *Balint* group. During a session, a “problem” is presented by a group member, following a rotation or “turn taking” scheme. The other members do not attempt to solve the problem by adding technical information or through “advice” to the presenter. Instead, they explore its meaning dealing with the issue as if it were their **own problem**. Hence, they voice their (free) associations with the topic initially presented.

This kind of reflection helps the presenter because it forces him to “think further” about the issue, thus monitoring and “overriding”, if needed, the tendency to solve the problem in an automatic, pseudo-intuitive way.

Nevertheless, the **UrbanEcon** group bears some specific features if compared with a medical group. Now the process is centered on scientific research, rather than on human relationships, with the consequence that the group’s working is more formal. The “turn taking” scheme is planned in advance, rather than being spontaneous and made “on the spot”. Technical information plays a more prominent role in the **UrbanEcon**, leading to the fact that information in each session is backed by a “written note”, which however is kept very small by the group leader.

The time lapse of this study is only 8 months. Typically *Balint* groups require at least two years if they are to change the professional behavior of members. We intend to update this paper based on the future experience with the group.

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